For the first time, new drugs could be denied approval on the basis of environmental harm. The world's rivers are full of drugs — and it's making the world sick.

A leaked draft of the European Commission's revision of the bloc's pharmaceutical rules shows the EU is looking to crack down on pollution from medicines by ratcheting up environmental requirements. But its plans are facing internal resistance, pushback from industry and questions over methodology — and it remains to be seen which measures make the cut when the proposal is finally published on April 26.

It's not a trivial problem. One study published last year monitored over 1,000 sampling sites along 258 rivers in 104 countries across all continents for active pharmaceutical ingredients. Only an indigenous village in **Venezuela** — where modern medicines aren't used — and Iceland were unscathed.

While not immediately lethal, drug-laced rivers harm wildlife, such as fish, frogs and birds, as the chemicals can alter their growth, reproduction and behavior.

And when antibiotics go into waterways, it can increase bacterial resistance to these lifesaving medicines, harming people's ability to fight common infections. The U.N. estimates that up to **10 million deaths** could be caused by superbugs by 2050, matching the annual death toll of cancer.

In its draft plans, the Commission wants to allow the EU's drug regulator to turn down medicines approval on environmental grounds, and require drug companies to measure the environmental impact of their production process.

It would be a step-change in attempts to curb pharmaceutical-linked pollution.

Tug-of-war

For environmental activists, stricter standards can't come soon enough.

Scientists in recent years have warned that pharmaceuticals constitute a "weakly regulated global environmental risk." And a February U.N. Environmental Program report on antimicrobial resistance (AMR) found that "the pharmaceutical industry is considered largely an unregulated sector in terms of environmental pollution."

"I don't think that [pharmaceutical pollution] has been taken yet seriously enough [by policymakers] — it should be taken more seriously," said Mirella Miettinen, a senior researcher in environmental law at the University of Eastern Finland's law school. "And quite fast hopefully."

But the new rules are not a sure thing. A document seen by POLITICO showed that the proposed changes have already been caught in an internal tug-of-war, with the Commission's environment department pushing for a greater focus on environmental risks

and the industry department skeptical of more stringent rules. Meanwhile, the pharmaceutical industry has already pushed back against the leaked draft.

Hubertus Cranz, director general of the German Medicines Manufacturers' Association, called the proposals "very problematic," saying that while his group is committed to objectives around environmental sustainability, the industry is really "struggling a lot with the administrative burden."

Linking environmental risk assessments to drug approvals risks detracting from drug efficacy and safety — the main metrics by which to judge new drugs until now, he added.

'Meaningless' risk assessments

Under current rules for drug approvals, pharmaceutical companies have to submit an environmental risk assessment (ERA) detailing how toxic the chemicals in a new medicine are, how long they linger in the environment, and what their impact is on plants, animals and microbes.

They're also required to estimate how much of these ingredients will leak into the environment through normal use and disposal, and can be asked to put in place mitigation measures if they exceed certain levels.

But Laure Herold, a communications official for the **European Medicines Agency** (EMA), said that while companies are required to submit an environmental risk assessment, and would be marked down for a missing one, marketing authorization can't currently be denied on the basis of an "incomplete ERA."

An analysis by the Pharmaceutical Journal found that one in five new medicines approved by the EMA in 2021 were submitted without all environmental data. And drugs approved before October 30, 2005 were never required to carry out an assessment.

"So far, it's pretty meaningless, and we're really hoping that with this new legislation that is going to change," said Dorothea Baltruks, a research associate at the Centre for Planetary Health Policy, a German think tank.

Under the proposed rules, drug companies will need to estimate — for the first time — the environmental impact of their manufacturing process, beyond use and disposal of the medicines. They will be asked to propose risk mitigation measures to reduce the impact of manufacturing wastewater in the environment. And, crucially, the EMA will be able to turn down a drug's approval if it doesn't meet certain standards.

A bigger problem?

Perhaps a bigger problem is that there's disagreement about how risks are actually assessed and what the permissible levels of chemicals are — something it will be up to regulators to decide.

Herold said the risk assessments are based on worst-case scenarios of environmental exposure, and that "only a very small minority of human medicinal products have been shown to constitute a potential threat to the environment."

But Alistair Boxall, one of the co-authors of the study on pharmaceutical pollution in rivers, takes issue with the "underlying science" of the current risk assessments, saying they're not sensitive enough to calculate a drug's pollution footprint correctly.

The anti-inflammatory drug **Diclofenac,** for example, is a widely used over-the-counter medicine that is known to pose a threat to certain animals and plants — it gets flushed into wastewater systems after digestion. But based on the standard studies necessary to conduct an environmental risk assessment under EU law, the data suggests the drug holds little danger for rivers.

"I think some of the models we use are probably not giving necessarily the right answers," Boxall said.

What's more, while the proposed risk assessments will — for the first time — consider the impact of antibiotics production on **AMR**, more research is needed before policymakers can introduce binding targets, according to one of the authors of the U.N. report on AMR in the environment.

Too stringent standards could drive up prices and negatively impact antibiotic access, but it's also not yet clear what the effects of persistent lower levels of antibiotic pollution are.

"We know that, in the long run, releasing chemicals into the environment isn't a good thing," said **David Graham**, professor of ecosystems engineering at Newcastle University. But "it's very much a matter of almost professional opinion, as to the level and extent of effects you might see."

Source: Politico